

WHAT IS CLAIMED IS:

1. An imaging optical system for imaging on a predetermined surface information in a region having a length (A) in a long side direction and a length
5 (B) in a short side direction which satisfy a relation of $A/B > 10$, comprising:

a diaphragm;

a first set of a plurality of curved reflection surfaces arranged on an object surface side from the
10 diaphragm; and

a second set of a plurality of curved reflection surfaces arranged on an image surface side from the diaphragm,

wherein an optical path of a light beam passing
15 through a center of the diaphragm and a center of an image obtained through the imaging is deflected by the reflection surfaces within a surface substantially perpendicular to the long side of the region to undergo crossing at least once.

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2. An imaging optical system according to claim 1,

wherein the crossing of the optical path is caused on the object surface side from the diaphragm.

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3. An imaging optical system according to claim 1,

wherein all the reflection surfaces satisfy a conditional expression:

$$|P|S < 0.5$$

where P (mm^{-1}) represents a power within a surface
5 perpendicular to the long side direction and S (mm)
represents a distance from the reflection surface to
a subsequent optical surface along a reference axis.

4. An imaging optical system according to claim
10 1,

wherein the number (X) of reflection surfaces
included in the first set of the plurality of curved
reflection surfaces and the number (Y) of reflection
surfaces included in the second set of the plurality
15 of curved reflection surfaces satisfy a relation:

$$0.65 < X/Y < 1.6.$$

5. An imaging optical system according to claim
1,

20 wherein the crossing of the optical path is
caused on both the object surface side and the image
surface side from the diaphragm.

6. An imaging optical system according to claim
25 1,

wherein optical powers applied by the
reflection surfaces of the imaging optical system to

the long side direction of the imaged region are all positive.

7. An imaging optical system according to claim
5 1,

wherein an intermediate image is not formed in the optical path.

8. An image reading apparatus comprising:
10 the imaging optical system according to any one of claims 1 to 7; and

a line sensor arranged substantially in an image surface position of the imaging optical system and adapted to convert a formed image to an
15 electrical signal.